

REMARKS/ARGUMENTS

Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action and amended as necessary to more clearly and particularly describe the subject matter which applicants regard as the invention.

Claims 1, 4, 6 and 10 have been amended. Claim 5 has been canceled.

The Examiner objected to claim 5 under 37 CFR 1.75 as being a substantial duplicate of claim 4. Claim 5 has been canceled, rendering the objection moot.

The Examiner objected to claim 9 under 37 CFR 1.75 as being a substantial duplicate of claim 8. Claim 8 depends from claim 1, while claim 9 depends from claim 7, which depends from claim 6. Because claims 8 and 9 depend from different base claims, which are not themselves duplicates, claims 8 and 9 are not substantially duplicate.

Claims 1-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Keiichi in view of Toshio and Carr. Claim 1 recites, “an optical system means that provides a focal length which increases according to wavelengths of light from short-wavelength visible light to near infrared light so that three components of visible light and near infrared light in different wavelength regions severally form images at different locations according to their wavelengths...” The cited references fail to teach or suggest the noted limitations. Toshio, which the Examiner calls “Keiichi” in discussing claim 1, merely teaches a read system and does not teach or suggest *an optical system means* (e.g., an optical lens) *that provides a focal length*. Carr teaches the use of multiple photodiodes placed at different depths within a semiconductor substrate and that visible wavelength photons and infrared wavelength photons are absorbed at different depths caused by the increasing optical absorption coefficient of silicon (2:59-67).

However, Carr does not teach *an optical system means* (e.g., an optical lens) *that provides a focal length which increases* according to wavelengths of light *so that* three components of visible light and near infrared light in different wavelength regions severally form images at different locations according to their wavelengths. In the claimed invention, the optical system means causes the formation of images at different locations (i.e., at different depths), for detection by a visible light detection means and a near infrared light detection means. Keiichi, which the Examiner calls “Toshio” in discussing claim 1, also fails to teach the noted limitations. Because the cited combination of references fails to teach or suggest all of the claimed limitations, claim 1 is allowable over the combination.

Claims 2-4 depend from claim 1 and are allowable for at least the reasons discussed above. Claim 5 has been canceled.

Claim 6 recites, “an optical system means that provides a focal length which increases according to wavelengths of light from short-wavelength visible light to near infrared light so that three components of visible light and near infrared light in different wavelength regions severally form images at different locations according to their wavelengths...” The arguments provided above with respect to claim 1 also apply to claim 6. Accordingly, claim 6 is allowable over the cited combination of references.

Claims 7 and 9 depend from claim allowable 6, and claim 8 depends from allowable claim 1. Therefore, claims 7-9 are allowable over the cited combination of references.

Claim 10 recites, “making three components of visible light and near infrared light in different wavelength regions severally form images at different locations according to their wavelengths using an optical system means that provides a focal length which increases according to wavelengths of light from short-wavelength visible light to near infrared light...”

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The arguments provided above with respect to claim 1 also apply to claim 10. Accordingly, claim 10 is allowable over the cited combination of references.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 37242.

Respectfully submitted,
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